

QUANTUM DOT FIBER

Abstract: A fiber of microscopic diameter, having control wires (34), possibly surrounded by an insulator (35), which pass energy to electrodes (30) on top of material layers (31) and (32) which form quantum dots, or to quantum dot particles (37) on the fiber's surface. The energy passing through the wires stimulates the quantum dots (QD), leading to the formation of "artificial atoms" with real-time tunable properties. These artificial atoms then serve as programmable dopants. The fiber can be used as a programmable dopant inside bulk materials, as a building block for new materials with unique properties, or as a substitute for quantum dots or quantum wires in certain applications.